Low resistance thick film chip resistor　RPL series

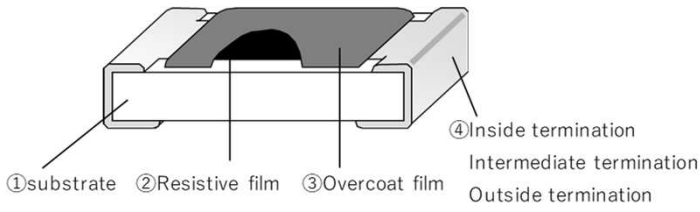
RPL03（0402）RPL05（0603）RPL10（0805）
RPL18（1206）RPL33（1210）RPL50（2010）
RPL1S（2512）　　*(　): Inch size

EOL (End of life) ：RPL03(0402) , RPL50(2010) , RPL1S(2512)

■Features

・Lineup from 0.1Ω low resistance value
・RoHS qualified
・ELV qualified
・AEC-Q200 qualified

■Structure



*This is only a schematic drawing of the structure.

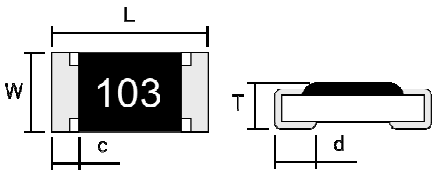
■Part No. Explanation (Example)

R	P	L	0	3	T	R	1	0	J

Product type	Rated power and Size	Packaging form	Nominal resistance value(*)	Resistance tolerance
RPL : low resistance value	03:0.125W,0402 05:0.2W,0603 10:0.33W,0805 18:0.5W,1206 33:0.66W,1210 50:0.75W,2010 1S:1W,2512	T : 4mm pitch taping ϕ 180 reel (RPC 03 is 2mm pitch)	The resistance value is indicated by 3-digit numbers.	J±5% F±1%

*The first two numbers are significant numbers,
and the third one is the number of zeros "0" following to the first two numbers (multiple of 10).
*If there is a decimal point in resistance value, it is indicated by "R" and all numbers are significant numbers.

■Dimensions



＊External dimensions are for reference only.

Overcoat film color : Black
The resistance value is indicated by 3-digit numbers.
There are no indication of resistance value in RPL03.

	L	W	T	c	d
RPL03	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	$0.25^{+0.10}_{-0.05}$
RPL05	1.60±0.15	0.80±0.15	0.45±0.10	0.30±0.15	0.35±0.15
RPL10	2.00±0.15	1.25±0.15	$0.55^{+0.10}_{-0.05}$	$0.35^{+0.20}_{-0.15}$	0.40±0.15
RPL18	$3.10^{+0.20}_{-0.10}$	1.55±0.15	$0.55^{+0.10}_{-0.05}$	0.45±0.20	$0.50^{+0.20}_{-0.15}$
RPL33	$3.10^{+0.20}_{-0.10}$	2.60±0.15	0.60±0.10	0.45±0.20	$0.50^{+0.20}_{-0.15}$
RPL50	5.00±0.15	2.50±0.15	0.60±0.10	0.60±0.20	0.60±0.20
RPL1S	6.30±0.20	3.20±0.20	0.60±0.10	0.60±0.20	0.60±0.20

(Unit: mm)

EOL (End of life)　　：RPL03(0402) , RPL50(2010) , RPL1S(2512)

■Ratings

	Rated power	Range of rated resistance	Tolerance on rated resistance	Category temperature range	Temperature Coefficient of Resistance(T.C.R)		
RPL03	0.125 W	0.22Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.22Ω~10Ω	±200×10⁻⁶/°C
RPL05	0.2 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C
RPL10	0.33 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C
RPL18	0.5 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C
RPL33	0.66 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C
RPL50	0.75 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C
RPL1S	1 W	0.10Ω~10Ω	J(±5%) F(±1%)	-55°C~+155°C		0.10Ω~0.20Ω	±250×10⁻⁶/°C
						0.22Ω~10Ω	±200×10⁻⁶/°C

＊Rated voltage $=\sqrt{Rated\ power \times Resistance\ value}$

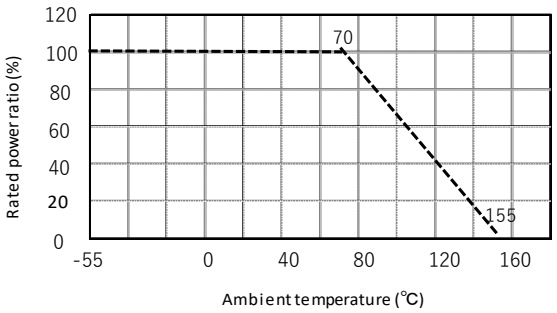
＊There are the supplementary information about rating on reference page.

＊Temperature Coefficient of Resistance (T.C.R) is based on JIS C5201-1 6.2 between two points:25°C and 125°C.

■Specifications and test methods

Item	Specifications	Test method
Overload	±(2%+0.005Ω)	JIS C5201-1 8.1 2.5×Rated voltage, for 5 seconds
Bend strength of the face plating	±(1%+0.005Ω)	JIS C5201-1 9.8 Bending distance : 3mm
Resistance to soldering heat	±(1%+0.005Ω)	JIS C5201-1 11.2 260±5°C.10(sec.)
Solderability	Covered with more than 95%	JIS C5201-1 11.1 245±3°C.(sec.)
Rapid change of temperature	±(1%+0.005Ω)	JIS C5201-1 10.1 -55°C⇔+125°C,1000(times)
Loadlife in humidity	±(3%+0.005Ω)	60±2°C.90~95% R.H 1000h
Endurance at 70°C	±(3%+0.005Ω)	JIS C5201-1 7.1 70±2°C.1000h

■Derating curve



＊Rated power of the resistor is the maximum power which can be loaded continuously at the ambient temperature of 70 °C. For the ambient temperature above 70°C, please use according to the load derating curve (dotted line). Please note that the component surface temperature does not exceed operating temperature range.